

AACTAGATGCAGCACCACAATCACTACCAGGTACCAATCATATACCAATAATGTACTAATAATGTACCAATAACTATGGTTTATAAAGATGGTGTCAATTTAAATCAATATTAGTTCCTTATATTA 125
M V S F K S I L V P Y I

CACTCTTTTAAATGAGCGGTGCTGCTTTGCAAGTGATACCGATCCCGAAGCTGGTGGGCTAGTGAAGCTGGTGGGCTAGTGGAACTGTTGGGCCAGTGAAGCTGGTGGGCTAGTGAAGCT 250
Repeat Sequences
T L F L M S G A V F A S D T D P E A G G P S E A G G P S G T V G P S E A G G P S E A

GGTGGGCTAGTGGAACTGGTGGGCTAGTGAAGCTGGTGGGCTAGTGAAGCTGGTGGGCTAGTGAAGCTGGTGGGCTAGTGAAGCTGGTGGGCTAGTGGAACTGGTGGGCTAGTGAAGCT 375
Repeat Sequences
G G P S G T G W P S E A G G P S E A G G P S E A G G P S E A G G P S G T G W P S G T

TGGTGGGCTAGTGAAGCTGGTGGGCTAGTGAAGCTGGTGGGCTAGTGAAGCTGGTGGGCTAGTGAAGCTGGTGGGCTAGTGAAGCTGGTGGGCTAGTGAAGCTGGTGGGCTAGTGAAGCT 500
Repeat Sequences
G W P S E A G W S S E R F G Y Q L L P Y S R R I V I F N E V C L S Y I Y K H S V M

TATTGGAACGAGATAGGTGAACGATGGTCATAAGACTACATTGAAGAAAAACCAAGGAGAAGAATAATTGAAAAAGAATTGAAAAATGTTTTCTGAACAATATTCCTTATGAAGAAA 625
I L E R D R V N D G H K D Y I E E K T K E K N K L K K E L E K C F P E Q Y S L M K K

GAAGAATTGGCTAGAATATTGATAATGCATCCACTATCTCTTCAAAATATAAGTTATTGGTTGATGAATATCAACAAGGCTATGGTACATTGGAAGGTCAGCTGCTGATAATTTTGACCA 750
E E L A R I F D N A S T I S S K Y K L L V D E I S N K A Y G T L E G P A A D N F D H

TTTCGTAATATATGGAAGCTATTGTACTTAAAGATATGTTATATATTGTGACTTATTATTACAACATTTAATCTATAAATTCTATTATGACAATACCGTTAATGATATCAAGAAAAATTTG 875
F R N I W K S I V L K D M F I Y C D L L L Q H L I Y K F Y Y D N T V N D I K K N F

ACGAATCCAAATCTAAAGCTTTAGTTTTGAGGGATAAGATCACTAAAAAGGATGAGATTATAACACTCATTTTGAGGACATGATTAGGAGTTGAATAGTGCAGCAGAAGAATTTAATAAATT 1000
D E S K S K A L V L R D K I T K D G D Y N T H F E D M I K E L N S A A E E F N K I

GTTGACATCATGATTTCCAACATTGGGATTATGATGAGTATGACAGTATTGCAAGTTTCAAAACATTTCTTCAATGATCACCAGAAATCACTAAATCACCAGGTTTCTAATGTAATAATTC 1125
V D I M I S N I G D Y D E Y D S I A S F K P F L S M I T E I T K I T K V S N V I I P

TGGAATTAAGGCACCTAAGTTTAAACGTTTTTTAATATTTATTACAAAATAGATGTAATACCAGATGTACATTATTATATTACAAAATTTACACATTATTTATGTATGAACGAACGAACAT 1250
G I K A L T L T V F L I F I T K

Fig. 1A

<u>CTCAGTCTTAATGAAGAAATTGGGATAAATATGGAATAGATTAAAGTAACATGAGAAAGATGAATATAATATTAGAATTGAAATTTACAGAAATAAAATGAAGTAAAGAGTGTATTTGT</u>	1375
<u>AATAATTATAATAAATTAGTATACATGATTATATTACAGATGACTATTGATTATTGTATCAATTAATATTGATTATTAATGATATCATATATGTATATGTTAATGATTGATTGTTATACGT</u>	1500
<u>TGTGAATATGTTATATAATGACACTATAATAATTAATATAATGTAGAGGATATTTTTTAAATAGTATTTAATGAATATTATAGTTATAATTATAATAATGTAGATAAAATGACATTAAATT</u>	1625
<u>GAATGTTAAATTGAAATGTATGTAAAAATATGATTATAATCTGAATTGATTAATAATATAATATTCTACAATTAATTTTTGTAAATTATAATAATTGATTATTAATCTTTGAATTATT</u>	1750
<u>ATAAATAATTATACCTCATTAAATATTTTACATAAATTTCCAAATTATTATCCTTTATCTTAATGTTATCCAATTTACACATCTTCTTCATTACAATATTTTTACTAATCCTGTATGC</u>	1875
<u>TCATATTCATATTCCTTAGAAATATAACGAAAATTAGATGTAACCTCGCCACTTACAAGTAACTACCATCAATATAATAATGAATACCATTGATCGGTATATCTTTATATTTTATC</u>	2000
<u>ATATTTTATTTTGTGATTATCCATTCATTGTATCATTCAATGAGAGAAATAATAGCAGAAAGATCCTTCTATAGAAACATAAAATTCATTAATACTGGATTATTATGTTTGAAGTATA</u>	2125
<u>GATGTTAAATCAATAACACTACCAGTTGGTAATTTAGCATTGTCATCAATTCATTAATATAATCAGAAATTTGATTTTATCAATTTTATTCGGATGTGATAATTTATTTGTTCTGATTCAT</u>	2250
<u>CGATCATGTATACAAATACTATTGTTAAAGTTCCCTATCCTTATAAATTAAGTGGCCAATAAGATTGGCATTAAATACATTAGTAGTGTGTATTGTAAATAGTATCATTAGTGGTACTGACA</u>	2375
<u>GTTGTTATAGGTTTTGATTCCATAATGAACATCATTTTTATCTACACAATACA</u>	2430

Fig. 1B

Figure 2A shows the results of the ELISA assay for the detection of anti-Babesia antibodies in serum samples. The y-axis represents the optical density (OD) at 450 nm, and the x-axis represents the serum ID. The samples are grouped into Babesia and Normals. The legend indicates four different antigen preparations: BABS-1 (diagonal lines), BMNI-3 (white), BABS-4 (diagonal lines), and BMNI-6 (checkered).

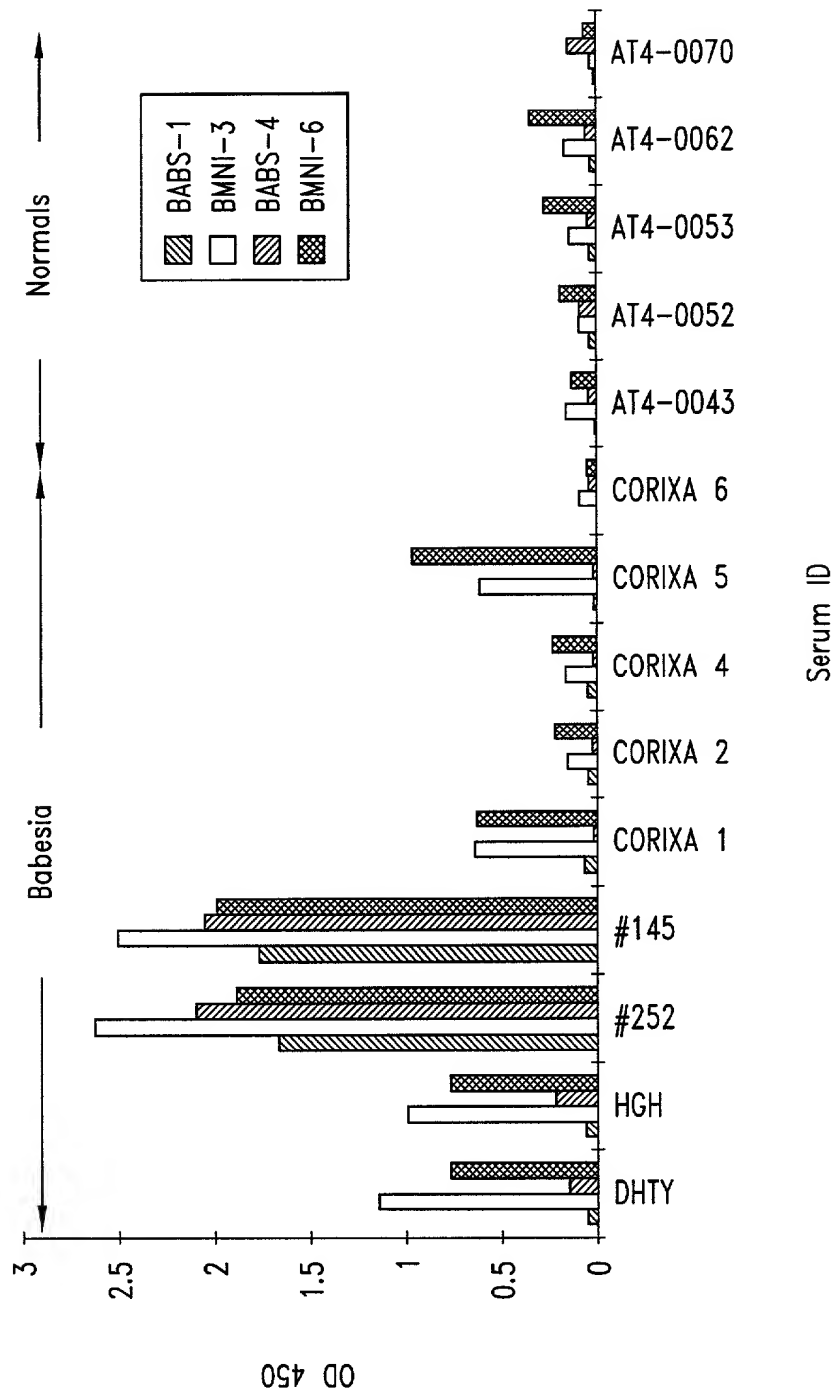


Fig. 2A

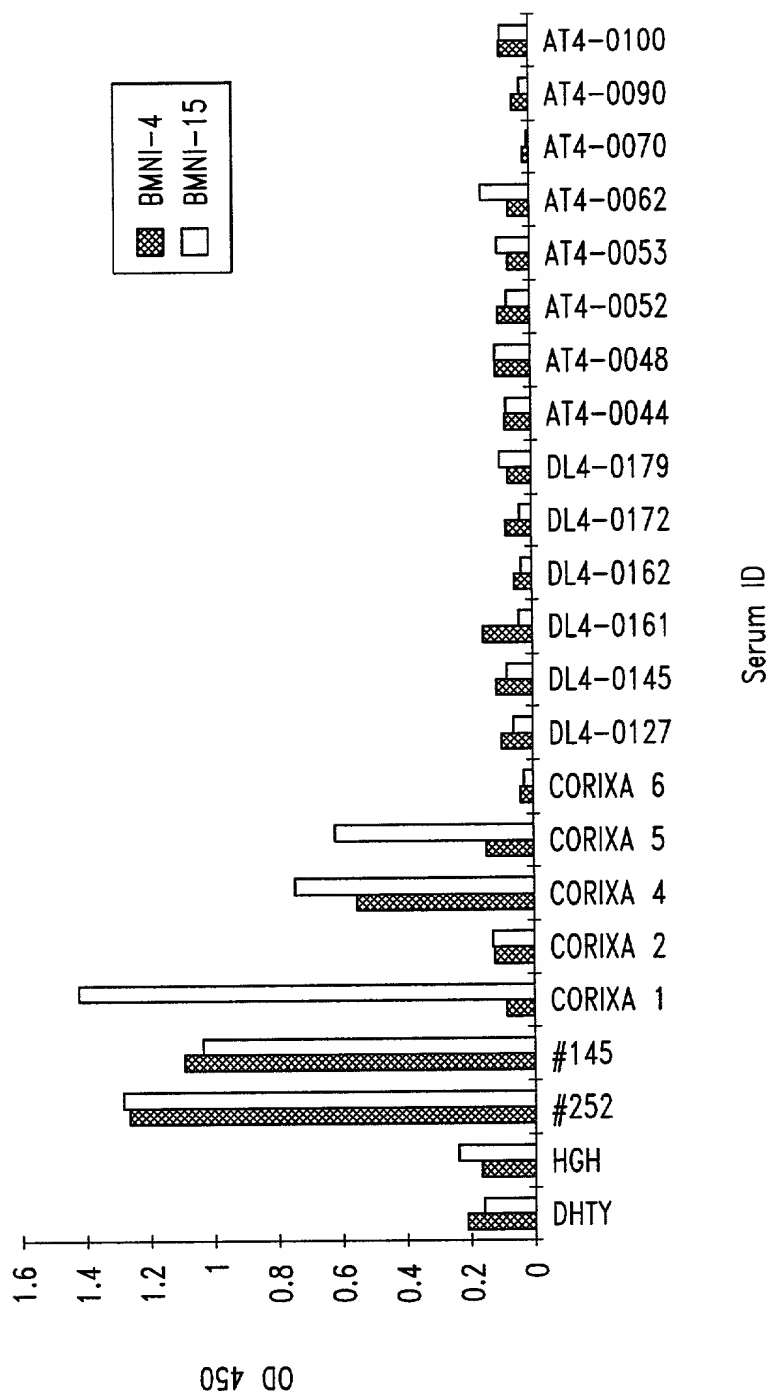


Fig. 2B

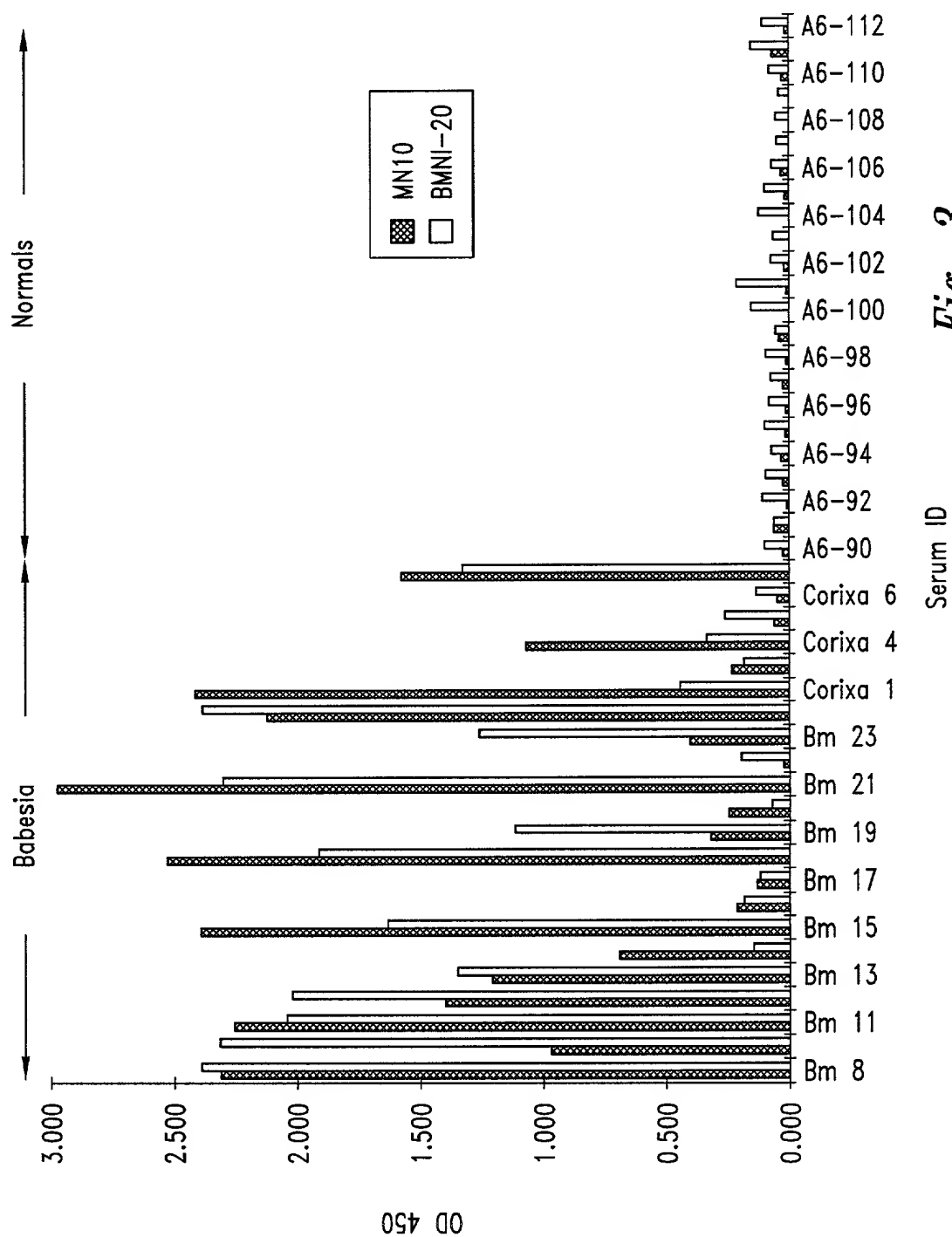


Fig. 3

Serum ID

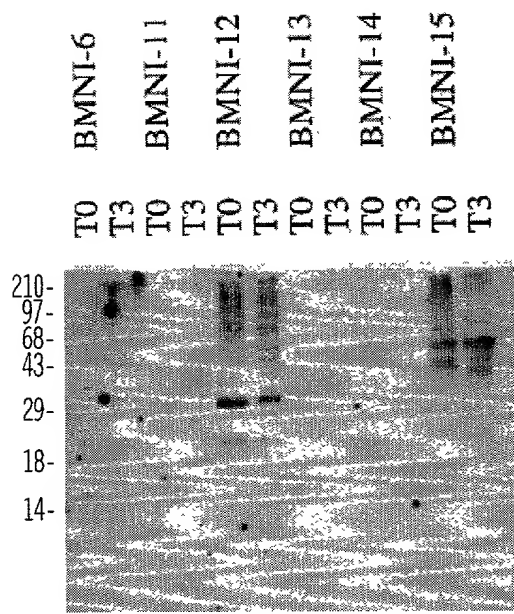
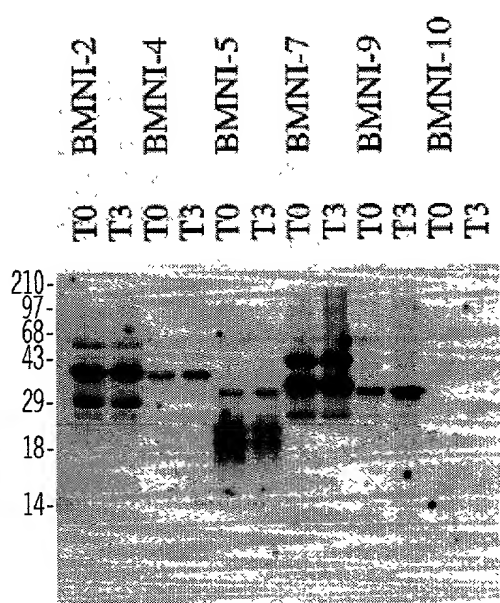
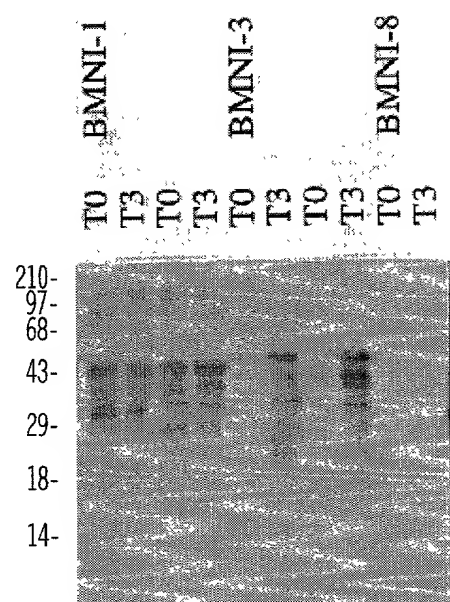


Fig. 4

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

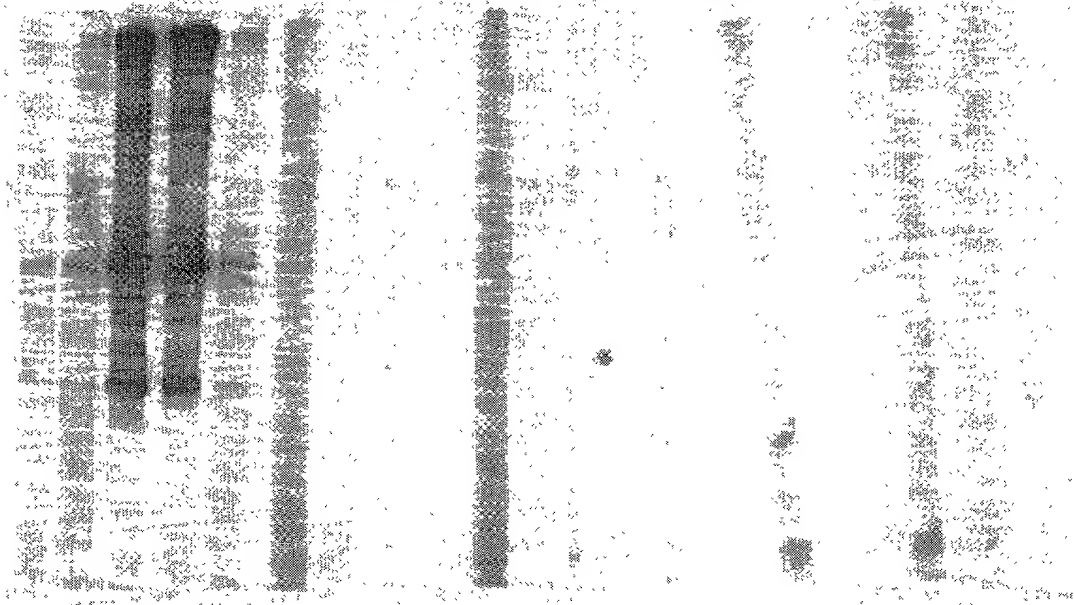


Fig. 5

BI254	.....	..AGDTDREA	GGPSGTVGP.	.....	.....
BI1053	.....	...GDTDREA	GGPSGTVGP.	.....	.....
BI2227	.....	..AGDTDREA	GGPSGTVGP.	.....	.SEAGGPSEA
BI2259	.....	..AGDTDREA	GGPSGTVGP.	.....	.SEAGGPSEA
BI2253	.....	.....EA	GGPSGTVGP.	.....	.SEAGGPSEA
GRAC,S	.....	...GDTDREA	GGPSGTVGP.	.....	.SEAGG PSEAGGPSEA
FISH,S	.....	..AGDTDREA	GGPSGTVGPS	SAGGPSEAGG	PSEAGGPSEA
MN1HAM	.....	..AGDTDREA	GGPSGTVGP.	.....	.....SEA
MN2	.....	..AGDTDREA	GGPSGTVGP.	.....	.....
MN1PAT	.....	..AGDTDREA	GGPSGTVGP.	.....	.....SEA
Bmni-6	YITLFLMSG	VFAGDTDREA	GGPSGTVGP.	.....	.....SEA
MN3	.....	..AGDTDREA	GGPSGTVGP.	.....	.SEAGGPSEA
MR.T	.....	..AGDTDREA	GGPSGTVGP.	.....	.SEAGGPSEA
	51				100
BI254	...	SEAGGPS	EAGGPSGTVG	PSEAGGPSEA	GGPSGTGWPS EAGGPSGTVG
BI1053	...	SEAGGPS	EAGGPSGTVG	PSEAGGPSEA	GGPSGTGWPS EAGGPSGTVG
BI2227	GGPSEAGGPS	EAGGPSEAGG	PSEAGGPSEA	GGPSEAGGPS	EAGGPSEAGW
BI2259	GGPSEAGGPS	EAGGPSEAGG	PSEAGGPSEA	GGPSEAGGPS	EAGGPSEAGW
BI2253	GGPSEAGGPS	EAGGPSEAGG	PSEAGGPSEA	GGPSEAGGPS	EAGGPSEAGW
GRAC,S	GGPSEAGGPS	EAGGPSEAGG	PSEAGGPSEA	GGPSEAGGPS	EAGGPSEAGW
FISH,S	GGPSEAGGPS	EAGGPSEAGG	PSEAGGPSEA	GGPSEAGGPS	EAGGPSEAGW
MN1HAM	GGPSEAGGPS	EAGGPSEAGG	PSEAGGPSEA	GGPSEAGGPS	EAGGPSGTGW
MN2	...	SEAGGPS	EAGGPSEAGG	PSEAGGPSEA	GGPSEAGGPS EAGGPSGTGW
MN1PAT	GGPSEAGGPS	EAGGPSEAGG	PSEAGGPSEA	GGPSEAGGPS	EAGGPSGTGW
Bmni-6	GGPSEAGGPS	EAGGPSEAGG	PSEAGGPSEA	GGPSHAGGPS	EAGGPSGTGW
MN3	GGPSEAGGPS	EAGGPSEAGG	PSEAGGPSEA	GGPSEAGGPS	EAGGPSGTGW
MR.T	GGPSEAGGPS	EAGGPSEAGG	PSEAGGPSEA	GGPSEAGGPS	EAGGPSGTGW
	101				150
BI254	PSEAGGP...	.....S	EAGGPSGTGW	PSGTGWPEV	GWPSEFYGQ
BI1053	PSEAGGP...	.....S	EAGGPSGTGW	PSGTGWPEV	GWPSEFYGQ
BI2227	PSEAGWPSEA	GGPSGTGWPS	EAGWPSEAGW	PSEAGWPSEA	GW.....
BI2259	PSEAGWPSEA	GGPSGTGWPS	EAGWPSEAGW	PSEAGWPSEA	GWPSEFYGQ
BI2253	PSEAGWPSEA	GGPSGTGWPS	EAGWPSEAGW	PSEAGWPSEA	GWPSE....
GRAC,S	PSEAGWPSEA	GGPSGTGWPS	EAGWPSEAGW	PSEAGWPSEA	GWPSEFYGQ
FISH,S	PSEAGWPSEA	GGPSGTGWPS	EAGWPSEAGW	PSEAGWPSEA	GWPSEFYGQ
MN1HAM	PSEAGWP...	.....S	EAGWPSEAGW	PSEAGWPSEA	GWPSEFYGQ
MN2	PSEAGWP...	.....S	EAGWPSEAGW	PSEAGWPSEA	GW.....
MN1PAT	PSEAGWP...	.....S	EAGWPSEAGW	PSEAGWPSEA	GWPSEFYGQ
Bmni-6	PSEAGWP...	.....S	EAGWPSEAGW	PSEAGWPSEA	GWPSEFYGQ
MN3	PSEAGWP...	.....S	EAGWPSEAGW	PSEAGWPSEA	GWPSEFYGQ
MR.T	PSEAGWP...	.....S	EAGWPSEAGW	PSEAGWPSEA	GWPSEFYGQ

Fig. 6A

	151	177
BI254	LLWYSRRIVI	
BI1053	LLWYSRRIVI	
BI2227	.....
BI2259	LLWYSRRIVI	
BI2253	.....
GRAC,S	LLWYS.....	
FISH,S	.....
MN1HAM	LLWYSRRIVI	
MN2	.....
MN1PAT	LLWYS.....	
Bmni-6	LLWYSRRIVI FNEIYLSHIY EHSVMIL	
MN3	LLWYSR.....	
MR.T	LLWYSR.....	

Fig. 6B